

CLAIMS

1. A metal halide lamp having an arc tube formed of ceramic and a pair of opposing electrodes, comprising:

a Pr (praseodymium) halide, a Na (sodium) halide, and a
5 Ca (calcium) halide enclosed within the arc tube, wherein

the Pr halide content H_p [mol], the Na halide content H_n [mol], and the Ca halide content H_c [mol] satisfy the relationships of:

$$0.4 \leq H_c/H_p \leq 15.0; \text{ and}$$

10 $3.0 \leq H_n/H_p \leq 25.0.$

2. The metal halide lamp of claim 1, wherein each of the Pr halide content, the Na halide content, and the Ca halide content is equal to or greater than 1.0 mg/cm^3 .

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3. The metal halide lamp of claim 1, wherein $0.4 \leq H_c/H_p \leq 4.7.$

4. The metal halide lamp of claim 1, wherein $11.9 \leq H_c/H_p \leq 15.$
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5. The metal halide lamp of claim 1, wherein an inner diameter D(mm) of the arc tube and a distance L(mm) between tips of the electrodes satisfy the relationship $4 \leq L/D \leq 9$.

5 6. The metal halide lamp of claim 1, comprising an outer tube for accommodating the arc tube,

wherein an interspace between the arc tube and the outer tube is retained in a decompressed state at 1 kPa or less.

10 7. The metal halide lamp of claim 1 having a general color rendering index Ra of 70 or more, and a lamp efficiency of 100 LPW or more.

8. An illumination device comprising:
15 the metal halide lamp of any of claims 1 to 7; and
means for performing dimming of the metal halide lamp.

9. The illumination device of claim 8, wherein,
the means includes an electronic ballast for supplying
20 power to the electrodes of the metal halide lamp, and

the electronic ballast is capable of regulating the power within a range from 25% of a rating to the rating.